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Three new Lachnids with Comparative Notes on three others (Homop.).

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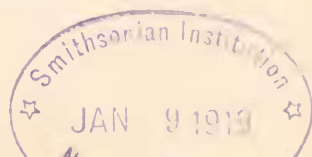
(Plates I and II.)

Essigella californica (Essig). (Plate I, A, figs. 1-6.)

Description made from specimens collected on *Pseudotsuga douglassi* at Corvallis, and on *Pinus ponderosa?* at Grants Pass, Oregon, and from specimens sent to me by E. O. Essig, from California. They occur on the needles and are hidden by the sheath so that close observation is necessary to find them.

Apterous viviparous female. General color, a pale yellowish green to brownish yellow with a row of small brown dots on each body segment. A short sharp spine arises from each spot. Antennae and legs dusky brown. The body is elongate with the head and thorax quadrangular and the abdomen ovoid and ending in a sharp pointed cauda. The antennae are five-segmented and reach almost to the second pair of coxae. The third segment usually does not have sensoria, but in

*The drawings used in this paper were made by Mrs. Margaret Nehrlich Pickett, since deceased.



some specimens one or two may be present. The fourth segment has one large, and the fifth one large and several small sensoria. The rostrum reaches slightly beyond the third pair of coxae and has a very distinctive structure. Plate I, A, fig. 6. The third and fourth segments are quadrangular, while the fifth is but a small half moon-shaped piece closely attached to the fourth segment. The nectaries have a very small, narrow, cone-shaped base. The cauda is triangular and ends in a nipple-like projection. The legs and front part of the head are set with prominent long spline-like hairs. Length of body 2.2 mm.

Alate viviparous female. General color the same as in the apterous forms, except that the thoracic shield is deep brown and the head and prothorax are dusky brown. The body is elongate and slender, and the general shape and size of the antennae, beak, abdomen, nectaries and cauda are like those of the apterous forms, except the antennal sensoria on the third segment and the legs, which are longer and more slender in this form. The third antennal segment has two or three large circular sensoria, usually widely separated. The wings are long and slender, with the median vein once forked. The base of the fork is very indistinct and in some specimens cannot be distinguished. Each branch becomes more distinct towards the distal part.

Measurements. Length of body, 2.5 mm. Length of antennal segments, III, 0.187 mm.; IV, 0.1 mm.; V, 0.145 mm.; total length, 0.62 mm. Length of wing, 2.78 mm. Length of hind tibia, 1.34 mm.; hind tarsus, 0.1 mm. and 0.187 mm. Length of beak, 0.92 mm.

Essigella pini new species. (Plate I, B, figs. 1-6).

Description made from specimens collected on *Pinus virginiana*, by W. L. McAtee, at Plummers Island, Maryland, June 27 and 28, 1914. This species resembles very closely *Essigella californica* Essig, described from California, but several distinct differences are easily found. The main difference is found in the length and shape of the hind tibiae and the wings. The hind tibiae of *E. pini* are short and stout while those of *E. californica* are longer and slender. The wing of the former species normally has but a simple median vein, while the latter has normally two or more or less connected branches. Specimens in balsam. *Types* in writer's collection.

Apterous viviparous female. General color a light yellowish green, with a series of rows of small brown spots on the abdomen. The fore part of the body is quadrangular, while the abdomen tapers to a point. The antennae are five-segmented and of a peculiar shape, as shown in the accompanying drawing. The rostrum of this species and of *E. californica* are also quite distinct and are unlike that of any other

known species. The nectaries are small and without the large cone-shaped base found in most species of Lachnids. Length of body, 1.5 mm.

Alate viviparous female. The antennae are five-segmented, as shown in Plate I, B, fig. 6. General color, yellowish green, the thorax being brownish (?). The abdomen is marked with a series of brown spots which occur in longitudinal rows. The antennae are short and have five segments; distal half of the third and the fourth and fifth segments brown. The fifth segment is longer than the fourth, and the fourth and fifth together are slightly longer than the third; third segment with three and sometimes four roundish sensoria; fourth with one large one at the distal end, and the fifth with one large and several small ones near the tip. The head is set with coarse spines, six of which are set in front. Similar spines are found on the body. The antennae have a few inconspicuous spines widely set apart. The legs are distinctly spiny, but not as much so as in *Essigella californica*. The rostrum is short with the third and fourth segments quadrangular and the terminal segment half moon-shaped and not acutely pointed as in other species of *Lachninae*. Wings long and narrow, front wing usually with the median vein simple. The tibiae are short and rather stout, while in *E. californica* they are longer and more slender. The nectaries are but openings with thickened edges. The cauda is angular with the tip elongated into a sharp nipple-like projection.

Measurements. Length of body, 1.55 mm. Length of antennal segments, III, 0.21 mm.; IV, 0.1 mm.; V, 0.145 mm. Total length, 0.6 mm. Length of wing, 2.33 mm.; width, 0.9 mm. Length of beak, 0.64 mm. Length of hind tibia, 0.85 mm.; hind tarsus, 0.1 mm. and 0.145 mm.

Eulachnus thunbergii new species. (Plate II, D, figs. 1-8.)

Descriptions made from one male and six oviparous females mounted on slides in balsam. This material was secured for study through the kindness of Dr. L. O. Howard and Mr. A. C. Baker, of the United States Bureau of Entomology.

Original notes made by Mr. Theo. Pergande are as follows, "Pergande acc. 12127." "March, 1906. Received from Dr. I. S. Kuwana, of the Imperial Agricultural Experiment Station, Hishigahara, Tokio, Japan, alcoholic specimens of a Lachnid, marked 267, with the following note: On the twigs of *Sciadopitys verticillata* and *Pinus thunbergii* Parl. Tabata, Tokio, Nov. 25, 1905, winged form; II, head and antennae black, eyes red, Prothorax dark yellowish green, dorsal aspect of meso-metathorax, black; abdomen yellowish green. Honey tubes black; wingless form II, body yellowish green. long and narrow; head black; eyes reddish purple. Antennae dark yel-

low, but the tips black; honey tubes black. Mounted them in balsam. This appears to be a new species, near *L. agilis* Kaltenbach."

I have not seen specimens of *Eulachnus agilis* Kaltenbach which may or may not be the same as *Eulachnus rileyi* Williams, but I find this species to be distinctly different from Williams' species. *Types* in U. S. Bureau of Entomology collection.

The main differences are shown in the following comparisons between the two.

<i>Oviparous Female</i>	<i>Eulachnus rileyi</i>	<i>Eulachnus thunbergii</i>
<i>Hairs</i>	Coarse, spinelike	Fine, semi-setaceous
<i>Antenna</i>	1.22 mm. long	1.02 mm. long
<i>Hind Tibia</i>	1.78 mm. long	1.11 mm. long
<i>Alate male</i>	<i>Eulachnus rileyi</i>	<i>Eulachnus thunbergii</i>
<i>Antenna</i>	2 mm. long	1.53 mm. long
<i>Hind Tibia</i>	2.05 mm. long	1.33 mm. long
<i>Sensoria</i>	Numerous, small	Numerous, larger than in <i>E. rileyi</i>

Apterous oviparous female. Specimens in balsam appear to have about the same color and characteristics as *E. rileyi*? Color grayish brown. Antennae and legs dusky brown. Body elongate and furnished with long semi-spinelike hairs. Similar hairs occur on the antennae and legs. Beak short and extending to the hind coxae. The last segment is a narrow black piece without length and is hardly separated from the preceding segment. Antennae reaching slightly beyond the base of the hind coxae. Third antennal segment approximately as long as the fourth and fifth. The fifth slightly longer than fourth or sixth, the latter two being about equal. The fourth and fifth segments each bear a single sensorium near the distal end. Cornicles with the base hardly more than a millimeter in depth. Cauda short and broadly rounded. Hind tibia somewhat stout and with numerous small sensoria along the basal two-thirds.

Measurements. Length of body, 2.34 mm. Length of antennal segments, III, 0.378 mm.; IV, 0.16 mm.; V, 0.2 mm.; VI, 0.16 mm. Total length, 1.53 mm. Length of hind tibia, 1.11 mm.

Alate Male. General color, head and thorax black. Antennae and legs, except the middle parts of the first and second tibiae, deep brown. Genital plates dusky black. Cauda light colored. Hairs on antennae, legs and body as in the apterous forms. Body long and slender, antennae reaching beyond the hind coxae.

Antennae coarse and with numerous circular sensoria of irregular size. The fourth and fifth segments are about equal in length and are shorter than the third and longer than the sixth.

Nectaries as in the apterous forms. Wings long and narrow with median vein having but a single fork. Angle between branches wider and shorter than in *Eulachnus rileyi*.

Measurements. Length of body a little more than 2 mm. Length of antennal segments not definite because of a deformity in the only available specimen. III, 0.56 mm.; IV, 0.34 mm.; V, 0.34 mm.; VI, 0.26 mm. Length of hind tibia, 1.33 mm.

Eulachnus rileyi Williams. (Plate II, E, figs. 1-6.)

Description made from specimens sent to me by J. J. Davis, and from specimens collected at St. Louis, Missouri; Chicago, Illinois, and Madison, Wisconsin.

Apterous viviparous female. General color, orange brown to greenish black; the color is caused to vary more or less by a grayish pulverulence covering the body. When placed in balsam four rows of black spots are visible on the body, and from each one there arises a long spine-like hair. Antennae light at the base and shading to black at the tip. Antennae long and slender and quite spiny. The third segment is not quite as long as four and five together, segments four and six approximately equal. The rostrum is short, not quite reaching the hind coxae. The nectaries are small with a narrow cone-shaped base. Entire body covered with long spine-like hairs.

Length of body, 2.4 mm. Length of antennal segments, III, 0.45 mm.; IV, 0.24 mm.; V, 0.31 mm.; VI, 0.24 mm. Total length, 1.4 mm. Length of hind tibia, 1.6 mm.; hind tarsi, 0.12 mm. and .22 mm.

Alate viviparous female. General color dark green or brown, covered with white waxy powder or threads. When mounted in balsam the head and thorax are brownish and the abdomen greenish brown. Antennae and hind pair of legs black, the tibia of the front pair of legs light colored except at the ends of the segment. Antennae long and slender and set with long black spine-like hairs. The third segment without sensoria, fourth and fifth with one each. Other characters as in apterous form.

Measurements. Length of body 2 mm. Length of antennal segments, III, 0.44 mm.; IV, 0.25 mm.; V, 0.26 mm.; VI, 0.19 mm. Total length, 1.3 mm. Length of hind tibia, 1.6 mm. Length of hind tarsus, 0.12 mm. and .22 mm.

UNILACHNUS new genus.

The characters upon which this genus is based are the unbranched median vein and blunt terminal segment of the ros-

trum. In the true genus *Lachnus* the terminal segment is long and tapering.

Type of genus Lachnus parvus Wilson.

Unilachnus parvus (Wilson). (Plate I, C, figs. 1-5).

This species is included in this paper to illustrate the genus and also to show the distinction between this and other species which have a simple or once forked median vein. A complete description will be found in Volume 41 of the Transactions of the American Entomological Society, 1915, p. 104. It occurs on the needles of *Pinus virginiana* and *P. rigida* and the type locality is the District of Columbia.

Alate viviparous female. Body elongate and slender, antennae and legs medium slender and thickly covered with long slender hairs. Antennae reaching to the third pair of coxae and the beak reaching to the second pair; beak broad and blunt at the tip. The third antennal segment bears about eight small sensoria, the fourth two and the fifth a single large one near the distal end; sixth with the usual large one near the base of the antennal spur. Wings hyaline and the median vein but a very indistinct single piece as indicated in the accompanying figure. Nectaries small and more or less bell-shaped. The opening rather large for the base. Cauda bluntly angled.

Measurements. Length of body, 1.48 mm.; width, 0.6 mm. Length of antennal segments, III, 0.32 mm.; IV, 0.154 mm.; V, 0.176 mm.; VI, 0.154 mm. Length of wing, 2.5 mm. Length of hind tibia, 0.92 mm. Length of hind tarsus, 0.066 mm. and 0.3 mm. Length of beak, 0.49 mm.

Lachnus juniperivora new species. (Plate II, F, figs. 1-5.)

From material collected by W. L. McAtee on Plummers Island, Maryland, July 5, 1914, on *Juniperinus virginiana*. *Types* in writer's collection.

Alate viviparous female. Specimens in balsam show no distinct coloration of antennae and legs, these parts appearing to be light dusky throughout. Third antennal segment approximately equal in length to the fourth and fifth segments, fourth segment shorter than the fifth, fifth and sixth about equal. Third segment with about six round sensoria of irregular size and not in alignment; fourth segment with two and fifth with two. Beak extending to the tip of the abdomen. The antennae are quite distinct from those of the other species in this genus and the nectaries are much broader at the base than those of *Lachnus tomentosus*. The wing venation is shown in Plate II, F, fig. 1. Nectaries with a wide sloping base. Cauda rounded, anal plate

